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IN THE

Supreme Court of the United States

OCTOBER TERM, 1986

GENERAL SIGNAL CORPORATION,

Petitioner,

v.

ALLIED TUBE AND CONDUIT CORPORATION,

Respondent.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

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98 pp

QUESTION PRESENTED

When seeking a United States Patent, the patent applicant is obliged to advise the U.S. Patent Office of all information known to the applicant that is "material" to the invention. Failure to fulfill this obligation may render the resulting patent unenforceable because it was procured by fraud or inequitable conduct. The Court of Appeals for the Federal Circuit, the appellate court created to establish uniformity of the patent law, has defined *four different standards* of "material" information, and held that any may be applied. Thus, the enforceability of a patent can, as it did in this case, depend upon the choice and interpretation by a court of any one of four different standards of "material" information.

The question presented is whether there should be a single, consistent standard to guide patent owners, applicants and everyone else in the patent system in determining what information is "material" such that, if withheld or misrepresented during the procedure for obtaining a patent, it can render the patent unenforceable.

RULE 28.1 LISTING

Petitioner, General Signal Corporation, is part owner of each of the following subsidiary corporations. General Signal has no parent, and is not affiliated with any other corporations, except wholly owned subsidiaries.

SUBSIDIARY	PERCENT OWNED
Algemene Sein Industrie B.V.	51
Electron Beam Corporation	83
General Signal do Brazil Industria Comercio Limitado	100
Subsidiary of General Signal do Brazil Industria Comercio Limitado:	
Hydraquip Hidraulica, S.A.	95
General Signal Industries, Inc.	100
Subsidiaries of General Signal Industries, Inc.:	
Ceilcote Ingenieros en Corrosion, S.A. de C.V.	51
Ceilcote Japan Limited	50
Leeds & Northrup Company	100
Subsidiaries of Leeds & Northrup Company:	
LDN, Ltd.	100
Subsidiary of LDN, Ltd.:	
Misurazioni Industriali Trading S.r.l.	95

Leeds & Northrup Italy, S.r.l	95
Misurazioni Industriali, S.p.A.	95
Leeds & Northrup, Ltd.	100
Subsidiaries of Leeds & Northrup, Ltd.:	
Banner Electric Company, Limited	75
Mixing Equipment Co., Inc.	100
Subsidiary of Mixing Equipment Co., Inc.:	
Lightnin Mixers Pty. Limited	60
Sola Basic Industries, Inc.	100
Subsidiary of Sola Basic Industries, Inc.:	
Industrias Sola Basic, S.A.	49
Solar Basic Australia, Limited	85
Thun, Inc.	75
G.E.C. - General Signal Ltd.	50
Hamworthy Hydraulics Limited	50
Solenergy Corporation	30
Subsidiary of General Signal Industries, Inc.:	
Ceilcote Pty. Ltd.	47
Subsidiary of Ceilcote Pty. Ltd.:	
Ceilcote (NZ) Ltd.	50
Subsidiaries of General Signal Mfg. Corp.:	
DeZurik Mexico, S.A. de C.V.	49
DeZurik New Zealand Limited	50

Subsidiaries of Sola Basic Industries, Inc.:	
Koyo Lindberg Limited	50
Terasaki Nelson Ltd.	50

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PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

The Petitioner, General Signal Corporation, respectfully prays that a writ of certiorari issue to review the judgment and opinion of the United States Court of Appeals for the Federal Circuit, entered in the above-entitled proceedings on March 29, 1986.

OPINIONS BELOW

The opinion of the Court of Appeals for the Federal Circuit has not been reported. It is reprinted in the appendix attached hereto at p. 1a.

The memorandum decision of the United States District Court for the District of Connecticut (Dorsey, D.J.) has not been reported. It is reprinted in the appendix hereto at p.6a.

JURISDICTION

This case was filed by Respondent in the District of Connecticut, invoking the exclusive jurisdiction of the federal courts over civil actions relating to patents pursuant to 28 U.S.C. Sec. 1336(a), and invoking the declaratory judgment jurisdiction of district courts pursuant to 28 U.S.C. Sec. 2201. The district court's memorandum of decision issued after trial on March 25, 1985, and was entered the same day.

On petitioner's appeal, the Federal Circuit issued an opinion on March 20, 1986 affirming in part and vacating in part the district court's memorandum decision. Petitioner thereafter filed a

Petition for Rehearing with the Federal Circuit, which was denied by order entered May 19, 1986.

The jurisdiction of this Court to review the judgment of the Federal Circuit is invoked under 28 U.S.C. Sec. 1254(1).

FEDERAL REGULATION INVOLVED

37 C.F.R. Sec. 1.56(a), Duty of disclosure; fraud.

> (a) A duty of candor and good faith toward the Patent and Trademark Office rests on the inventor, on each attorney or agent who prepares or prosecutes the application and on every other individual who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application. All such individuals have a duty to disclose to the Office information they are aware of which is material to the examination of the application. *Such information is material where there is a substantial likelihood that a reasonable examiner would consider it important in deciding whether to allow the application to issue as a patent.* The duty is commensurate with the degree of involvement in the preparation or prosecution of the application. (Emphasis added).

STATEMENT OF THE CASE

In reviewing the district court decision, the Federal Circuit considered and affirmed one ruling: the patent in this infringement suit is "unenforceable" for "inequitable conduct"[1] by Petitioner before the Patent and Trademark Office ("PTO"). That ruling resulted because Petitioner submitted a 15 page report to the PTO without including the report's cover sheet; the cover showed that Respondent authored the report. The Federal Circuit considered the omitted information "material" to a question of the identity of the inventor and therefore material to the patentability of the invention, despite the district court's conclusion that it is "unlikely" that the PTO would have denied the patent on the ground that the idea was not Petitioner's.

The patent in suit, United States Patent No. 4,033,167 issued in the name of Petitioner's employee, Mr. Robert A. Philibert (the "Philibert patent"), and is owned by the petitioner, General Signal Corporation ("General Signal"). The Philibert patent describes and claims a method for producing a particular kind of electrical conduit (tubing designed to contain electrical wires), known as "intermediate metal conduit" or "IMC". Respondent, Allied Tube and Conduit Corporation ("Allied"), filed a declaratory judgment action to contest General Signal's allegation that Allied was infringing the Philibert patent.

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1. "Inequitable conduct" is the term presently used by the Federal Circuit to describe conduct that has in the past been labeled as "fraudulent".

The district court found the patent invalid on several grounds, unenforceable for inequitable conduct and not infringed. p.2a. One ground for invalidity was that Mr. Philibert was a joint inventor, rather than the sole inventor. p.31a. In determining that the Philibert patent was not enforceable, the district court found that Mr. Philibert and General Signal did not inform the Patent Office of all information "material" to the examination of the patent application.

The invention was developed as part of an industry procedure convened by the Underwriters Laboratory, Inc. ("UL") for establishing electrical conduit standards. Following industry acceptance of the invention, General Signal obtained the Philibert patent.

During prosecution of the application for the patent, General Signal provided "background documentation" to the PTO, including a copy of a UL committee report describing the final dimensions of IMC. p.19a. Mr. Philibert, among others, was a member of the UL committee that developed final IMC dimensions for the report. The omitted information was the cover sheet of the UL report, which identified Allied as the report's author. p.19a.

The district court concluded that "[i]t would have been significant to the Examiner to have known the author" of the UL report, particularly as other than Philibert, "as such information would have reflected the development of the product and would have revealed the input of others. Further, it would have prompted additional inquiry as to whether the idea was truly Philibert's as opposed

to the combination of the deliberations" of the UL committee. p.39a.

However, the district court had earlier concluded that: "[w]hile the history of Philibert's 'development' of the patent was material, *it is unlikely that the examiner would have denied the patent on the ground that it was not Philibert's idea.*" p.39a. (emphasis added).

The district court further held that the failure to identify the authorship of the UL report "was not mere negligence nor even gross negligence, it was probably intentional." p.40a. The district court therefore ruled the Philibert patent "unenforceable" for "inequitable conduct". p.2a, 40a. Nevertheless, the district court concluded by saying Petitioner's conduct "was far from a reflection of the epitome of candor and integrity, *but it cannot be said to constitute fraud.*" p.47a. (emphasis added).

The Court of Appeals for the Federal Circuit affirmed the district court's legal conclusion of inequitable conduct, and held that the findings of materiality and intent were not clearly erroneous. p.5a. Specifically, it ruled that "the failure to credit [Allied] as the author was material, because it would have revealed the input of others and *would have prompted additional inquiry* as to whether the idea was truly Philibert's as opposed to the combination of the deliberations of the [UL] committee." p.3a. (emphasis added). The Federal Circuit also found that "[t]he cover page, which identified the proposal as [Allied's] work and its date, was deleted from the copies sent to the PTO." The Federal Circuit considered this a case

dealing "with acts of commission not simply acts of omission." p.5a.

The Federal Circuit, however, vacated the district court's holdings concerning validity, *including the district court's holding that Philibert was not the sole inventor of the patent in suit.* p.5a. The Federal Circuit vacated those holdings because it did not: "endorse the analysis of those issues in the district court memorandum of decision." p.5a.

REASONS FOR GRANTING THE WRIT

A. UNCERTAINTY OVER "MATERIALITY" THREATENS THE PATENT SYSTEM

1. Introduction

In the 58 years since the Supreme Court last addressed the materiality of misstatements to the Patent Office, *see Corona Cord Tire Co. v. Dovan Chemical Corp.*, 276 U.S. 358 (1928), the federal courts have wrestled unsuccessfully with fraud issues and produced a chaos of uncertainty. With the advent of the Court of Appeals for the Federal Circuit, that chaos has been institutionalized. The Federal Circuit has adopted four different standards for determining the "materiality" of information -- some inconsistent with this Court's holding in *Corona* -- and declared that *any* may be applied by the trial courts, thereby allowing courts to punish conduct that passes muster under one standard but not another. The resulting chaos makes the decision to purchase, enforce, apply for or defend against enforcement of a patent little

more than a roll-of-the-dice gamble, leading to destructive uncertainty in the patent system.

In *General Signal*, the Federal Circuit decided *only* the issue of fraud, and that decision turns on the definition of "material" information. The information found "material" in *General Signal*, if evaluated under the standard of the Supreme Court stated in *Corona*, could not be material. A review of the fraud ruling in this case will clearly delineate the limits of materiality and provide useful guidance for all who operate within the patent system.

2. *The Patent System is a Crucial Element of our Economy*

The patent system was created pursuant to the Constitutional mandate to "promote the Progress of Science and Useful Arts . . ." U.S. Const., Art. 1, Sec. 8, Cl. 7. *See* Patent Act of 1790, 1 Stat. 109-112 (1790). In the ensuing 196 years, the patent system has served as an essential stimulus to continued technical innovation:

> The United States has staked its national destiny and welfare upon the basic principle that private initiative, creative talents and venture capital shall be the primary means of determining the recipients of rewards for competitive enterprise. The American Patent System is deeply imbedded in that tradition. The Constitutional provision and the laws relating to patent rights give the patentee a limited-time exclusiveness. This temporary protection against free competition is awarded in the faith it

> will serve the public interest. The stated objective is to promote progress of science and the industrial arts. The exclusiveness of patent rights is regarded as a short-term public welfare monopoly which promotes the competitive economy of which the Patent System is itself a vital part.

Oppenheim, *A New Approach to Evaluation of the American Patent System*, 33 J. Pat. Off. Soc'y 555 (1951). The patent system operates by adding "the fuel of interest to the fire of genius . . . " A. Lincoln, *Lecture on 'Discoveries, Inventions and Improvements'* (February 22, 1860), so that "[t]o promote the progress of useful arts is the interest and policy of every enlightened government." *Grant v. Raymond*, 31 U.S. (6 Pet.) 218, 241 (1832).

The patent system is now threatened by erosive uncertainty. Neither inventors, patent owners, potential purchasers of patents nor competitors of patent owners knows with any certainty the circumstances under which patents on meritorious inventions will be held "unenforceable" because of "fraudulent" conduct of the inventor. This is so because the conduct of inventors before the PTO is governed by murky standards that are "fraught with confusion and contradiction . . . ", *American Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1364 (Fed. Cir.), *cert. denied*, 105 S. Ct. 95 (1984), resulting in fraud charges that are "cluttering up the patent system", *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1454 (Fed. Cir. 1984). The uncertainty centers on the inconsistent guidance from the Federal Circuit regarding what kind of information

is so "material" that its omission or misdescription will render a patent unenforceable.

3. "Fraud" and "Inequitable" Conduct

The doctrine of "fraud on the Patent Office" has its roots in the belief that the assertion of patent rights raises "issues of great moment to the public . . . " *Hazel-Atlas Glass Co. v. Hartford-Empire Co.*, 322 U.S. 238, 246 (1944). The courts therefore have a strong interest in evaluating charges of fraud associated with procurement of patents:

> A patent by its very nature is affected with a public interest. As recognized by the Constitution, it is a special privilege designed to serve the public purpose of promoting the "progress of Science and Useful Arts." At the same time, a patent is an exception to the general rule against monopolies and to the right to access to a free and open market. The far-reaching social and economic consequences of a patent, therefore, give the public a paramount interest in seeing that patent monopolies spring from backgrounds free from fraud or other inequitable conduct and that such monopolies are kept within their legitimate scope.

Precision Instrument Mfg. Co. v. Automotive Maintenance Machinery Co., 324 U.S. 806, 816 (1945).

"Fraud" allegations normally contend that the patent applicant either withheld "material"

information from the PTO or made "materially" false statements to the PTO. Although many courts have evaluated such allegations using common law fraud concepts, *see, e.g., Norton v. Curtiss*, 433 F.2d 779, 792-93 (C.C.P.A. 1971), the defense of "fraud in the PTO" is now generally established as a species of the equitable defense of "unclean hands". *Keystone Driller Co. v. General Excavator Co.*, 290 U.S. 240 (1933). *Accord J.P. Stevens & Co. v. Lex Tex Ltd.*, 747 F.2d 1553, 1559 (Fed. Cir. 1984). Since patent infringement actions are directed to the equitable powers of the District Courts, accused infringers may show that patent owners are not entitled to enforcement of their patent if the patent applicant's conduct in prosecuting the patent was so inequitable that the patent owner came to the court with "unclean hands". The patent is then said to be "unenforceable". *J. P. Stevens*, 747 F.2d at 1559.[2]

Regardless of whether conduct in the PTO is evaluated under common law or equitable

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2. The Federal Circuit has declared that it will refer only to "inequitable conduct" rather than "fraud", since it believes that the former encompasses the latter. *J.P. Stevens*, 747 F.2d at 1559. The Federal Circuit has never discussed in any detail how the common law concept of fraud, when applied to patent cases, differs from inequitable conduct. At common law, five elements were necessary to prove fraud: (1) a representation of material fact (2) falsity (3) intent, (4) justifiable reliance and (5) damages. *See Norton v. Curtiss*, 433 F.2d 779, 793 (C.C.P.A. 1970).

principles, the courts uniformly agree that at least two elements must be shown: (1) the "materiality" to the patentability of the invention of the information that was withheld or misstated, and (2) a minimum level of culpable "intent". *See Norton v. Curtiss*, 433 F.2d 779 (C.C.P.A. 1971); *Digital Equipment Co. v. Diamond*, 653 F.2d 701 (1st Cir. 1981); *J.P. Stevens*, 747 F.2d at 1559-60. Significantly, the Federal Circuit has made "materiality" the critical, if not the only issue, by ruling that intent can be "inferred" from the degree of materiality: "threshold intent is established where an actor in an applicant's position would have reasonably known that the reference is material", *J.P. Stevens, supra*, 747 F.2d at 1564.

4. *The Federal Circuit has Simultaneously Adopted Four Separate Standards of "Materiality"*

Despite recognizing that the law of patent fraud is "fraught with confusion", *American Hoist*, 725 F.2d at 1364, the Federal Circuit has simultaneously adopted four different standards of materiality, saying: "[t]here is no good reason, however, to be bound by any single standard, for the answer to any inquiry into fraud in the PTO does not begin and end with materiality, nor can materiality be said to be unconnected to other considerations." *American Hoist*, 725 F.2d at 1363. This rationale has led the Federal Circuit to declare that four distinct standards of materiality are *equally* applicable:

> Inequitable conduct requires proof by clear and convincing evidence of a threshold degree of materiality of the

> nondisclosed or false information. That threshold can be established by *any* of four tests: (1) objective "but for"; (2) subjective "but for", (3) "but it may have been"; and (4) 37 C.F.R. Sec. 1.56(a), *i.e.*, whether there is a substantial likelihood that a reasonable examiner would have considered the omitted or false information important in deciding whether to allow the application to issue as a patent.

Atlas Powder Co. v. E. I. Du Pont de Nemours & Co., 750 F.2d 1569, 1577-78 (Fed. Cir. 1984) (emphasis added).[3] The Federal Circuit's

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3. The Federal Circuit has adopted the Tenth Circuit explanation of the first three standards of materiality. *See American Hoist, supra*, 725 F.2d at 1362. According to the Tenth Circuit:

> In determining materiality, the courts are not in agreement on the test to be applied. Three different tests have been used. The first is the objective "but for" test, *i.e.*, the misrepresentation was so material that, but for the misrepresentation, the patent not only would not have been issued but should not have been issued. The second is the subjective "but for" test, *i.e.*, the misrepresentation caused the examiner to approve the application for patent when he would not otherwise have done so. Thus, the subjective test does not permit the reviewing court to conclude that, notwithstanding the

simultaneous adoption of multiple standards is the root of the uncertainty. Even a cursory review of the above standards shows that the same information can be totally immaterial under either of the "but for" standards, yet highly material under the "but it may have been" standard -- and the possible actions of a "reasonable examiner" being subject to debate, the same information may or may not be material under the 37 C.F.R. Sec. 1.56(a) standard. The "any of four tests" approach of the Federal Circuit means the question of materiality is never resolved until a court rules.

5. *Despite Ample Opportunity, the Federal Circuit has Failed to Settle on a Single Materiality Standard*

One of the primary purposes of the creation of the Court of Appeals for the Federal Circuit was the reestablishment of certainty in patent law. *See, e.g., Report of the Commission on Revision of the Federal Court Appellate System*, 67 F.R.D. 195, 369-71 (1975). In favorably reporting the bill to create the Federal Circuit, the House Judiciary Committee noted that "the primary problem in this

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misrepresentation, the patent was properly issued. The third test has been labeled the "but it might have been" test, *i.e.*, the misrepresentation in the course of the patent prosecution might have influenced the examiner.

Plastic Container Corp. v. Continental Plastics of Oklahoma, Inc., 607 F.2d 885, 899 (10th Cir. 1979), *cert. denied*, 444 U.S. 1018 (1980).

area is *uncertainty* which results from inconsistent application of the law to the facts of the individual case." H. R. Rep. No. 312, 97th Cong., 1st Sess. (1981) (emphasis added). Thus, "the central purpose [of the bill] is to reduce the widespread lack of uniformity and *uncertainty* of legal doctrine that exists in the administration of patent law." *Id.* (emphasis added). That purpose was based on a conclusion that "[b]usiness planning becomes easier as more stable and predictable patent law is introduced", and "[d]ecisions to file patent applications and to invest in commercializing inventions would be improved meaningfully as a result of the greater uniformity and reliability made possible" by creating the Federal Circuit. *Id.*

Despite the congressional mandate, and although the Federal Circuit has noted that "fraud" is a major problem area in patent law, *see, e.g., American Hoist*, 725 F.2d at 1364,[4] it has not fostered certainty, believing instead that "[t]here is no reason, however, to be bound by any single standard" of materiality. *American Hoist*, 725 F.2d at 1363. The result has produced no less than six commentaries noting the conflicting results of Federal Circuit fraud decisions. *See* Adamo & Ducatman, *The Status of the Rules of Prohibited*

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4. *In Kimberly-Clark, supra,* the Federal Circuit stated:

> "Fraud in the PTO" has been overplayed, is appearing in nearly every patent suit, and is cluttering up the patent system.

Kimberly-Clark, 745 F.2d at 1454.

Conduct Before the Office: "Violation of the Duty of Disclosure" out of "Inequitable Conduct" by "Fraud", 68 J. Pat. Off. Soc'y 193 (1986); Note, *A Practical Guide for Proving Fraud on the Patent and Trademark Office: J.P. Stevens & Co. v. Lex Tex Ltd.*, 34 Am. U. L. Rev. 729, 740 (1985); Kayton, *Ethics, Inequitable Conduct & Fraud*, in 6 *Patent Practice* Sec. 25-9C (1985); Banner[5], *The Duty of Candor (Pts. I & II)*, in *Developments 100* (1984), *Developments 127* (1985); Sokal, *Impact of Decisions of the Court of Appeals for the Federal Circuit on the Duty of Disclosure*, 66 J. Pat. Off. Soc'y 29, 29 n. 10 (1984).

Professor Kayton has described the situation as a "'black box' dilemma", where the evaluation of potential inequitable conduct is analogized to a scientist trying to "divine, imagine or conjecture" what happens inside a secret "black box" device based solely on the input and output from the box. In Professor Kayton's words, a "'black box' analysis of this type usually fails dismally. . . ." Kayton, *supra*, Sec. 25-96.

The Federal Circuit's refusal to settle on a single materiality standard contrasts with the PTO's adoption of a single standard. The PTO considers information to be material, if "a reasonable examiner would consider the information important in deciding whether to allow the application to issue as a patent." 37 C.F.R. Sec. 1.56. That standard is derived from the definition of materiality in *TSC Industries Inc. v. Northway*,

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5. The author, former Commissioner of Patents and Trademarks, Donald W. Banner, testified at trial as an expert witness on behalf of Petitioner.

426 U.S. 438 (1976), a stockholder suit. The Federal Circuit considers the PTO Standard "the starting point for determining materiality", *J.P. Stevens*, 747 F.2d at 1562, but it nevertheless advocates three other standards as well.

B. THE FEDERAL CIRCUIT'S FOUR STANDARDS HAVE CONFUSED THE LAW OF PATENT FRAUD

The simultaneous adoption of four separate standards of "materiality" has naturally lead to decisions that cannot be reconciled. The Federal Circuit has evaluated materiality in 16 reported decisions; in the process, it has adopted each of the four standards at least once. In *General Signal*, the Federal Circuit was inconsistent with its other decisions and the Supreme Court.

1. The Federal Circuit Decisions Conflict With Supreme Court Precedent

The Supreme Court last ruled 58 years ago on the materiality of information misstated to the PTO; the Federal Circuit has not followed that guidance. *In Corona Cord Tire Co. v. Dovan Chemical Corp.*, 276 U.S. 358 (1928), the patent applicant filed false affidavits in the PTO to support a patent application, describing successful test production of rubber goods. The Supreme Court agreed that no fraud occurred, because "[P]roduction of rubber goods for use or sale was not indispensable to the granting of the patent. Here the affidavits, though perhaps reckless, were not the basis for it or essentially material to its issue." *Id.* at 374. Although the affidavits falsely stated that a chemical process had been

successfully tested, the affidavits did not adversely affect the patent's validity, because related activities had been successfully performed. *Id.* Under *Corona*, information is material only when it is "indispensable to the granting of the patent".

The Federal Circuit has directly contradicted *Corona*. In *Driscoll v. Cebalo*, 731 F.2d 878 (Fed. Cir. 1984), it ruled that inequitable conduct can result from misstated information even if the misstatement *had no effect* on the PTO. *Driscoll* was an appeal from an interference proceeding[6], where the PTO had ruled that fraud had *not occurred*. A patent applicant had withheld information that was "material" to only part of the invention claimed by that applicant, *i.e.*, it was material to only two of the applicant's many "claims".[7] One of those "claims" was voluntarily withdrawn by the applicant, and the other was rejected by the PTO on other grounds, 731 F.2d at 882, so there could have been no effect on the eventual patent. Nevertheless, the Federal Circuit found "inequitable conduct" because the PTO "would have considered such prior art important"

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6. An "interference" is a mini-litigation where the PTO decides who was first among two or more parties claiming rights to the same invention. *See* 35 U.S.C. Sec. 135.

7. A patent applicant must "particularly point out and distinctly claim" the invention. 35 U.S.C. Sec. 112. Patents therefore end with single sentence descriptions of the invention, known as "claims". Patents often have dozens of claims.

in deciding whether to allow the patent to issue. 731 F.2d at 884. The Federal Circuit did not mention *Corona*.

The Federal Circuit also contradicted *Corona* in deciding whether affidavits are *always* material if submitted to overcome a rejection of the application by the PTO. In *Rohm & Haas Co. v. Crystal Chemical Co.*, 722 F.2d 1556 (Fed. Cir. 1983), the Federal Circuit found such an affidavit to be material, and declared "there is no room to argue that submission of false affidavits is not material." *Id.* at 1570-71. That ruling is directly contradictory to *Corona's* holding that an affidavit can be immaterial if it is not "indispensable" to the patent's issuance.

The information omitted in *General Signal* also is immaterial under *Corona*. The district court held it "unlikely" that the patent would not have issued if the omitted information had been provided. p.39a. Nevertheless, the Federal Circuit agreed that the information was "material" under the 37 C.F.R. Sec. 1.56(a) standard. p.5a.

2. *The Federal Circuit Decisions Conflict with Each Other*

Examples of inconsistencies are legion. The Federal Circuit ruled in *American Hoist* that "an applicant for patent is under no obligation to disclose all *pertinent* prior art or other pertinent information of which he is aware." 725 F.2d at 1362 (emphasis added). *Accord Atlas Powder Co. v. E.I. Du Pont de Nemours & Co.*, 750 F.2d 1569, 1578 (Fed. Cir. 1984) Neither *American Hoist* nor *Atlas Powder* can be reconciled with *Argus Chemical Corp. v. Fibre Glass-Evercoat Co.*, 759

F.2d 10 (Fed. Cir. 1985), where the Federal Circuit ruled that materiality was established by the testimony of the patent owner's expert who admitted that the withheld information "would be *pertinent* for consideration". *Id.* at 14 (emphasis added). The Federal Circuit confused the question further in *Laitram Corp. v. Cambridge Wire Cloth Co.*, 785 F.2d 292 (Fed. Cir. 1986), when it ruled that the withheld information was *not* material, because it was not "pertinent." *Id.* at 295.

The Federal Circuit has ruled both ways on the question of whether withheld information is conclusively established as "material" if the district court uses that information to find the patent invalid (as, for example, because the invention is ruled "obvious" in view of the withheld information). In *Kansas Jack Inc. v. Kuhn*, 719 F.2d 1144, 1152 (Fed. Cir. 1983) and *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1551 (Fed. Cir. 1983), the Federal Circuit said no. *Accord State Industries, Inc. v. Rheem Mfg. Co.*, 769 F.2d 762, 764 (Fed. Cir. 1985). Yet in *Vandenberg v. Dairy Equipment Co.*, 740 F.2d 1560, 1568 (Fed. Cir. 1984), it stated exactly the opposite, ruling that the District Court's "reliance upon [the non-disclosed] device in its opinion demonstrates its materiality as a reference." *Id.* at 1568.

The Federal Circuit also flip-flopped on whether materiality is determined by the "effect" the information had on the PTO proceedings. In *State v. Rheem*, the Federal Circuit found no materiality because the patent applicant's statement "had no substantive effect on the examiner's decision". 769 F.2d at 764. *Accord Orthopedic Equipment Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1383 (Fed. Cir. 1983) ("materiality"

not present because the patent examiner independently learned of the undisclosed information); *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1457 (Fed. Cir. 1984). Yet in *Driscoll v. Cebalo*, the Federal Circuit found inequitable conduct even though the nondisclosed information could not have affected the eventual patent. 731 F.2d at 882. *Driscoll* contradicts *Kimberly Clark* -- and *Corona* -- because the Federal Circuit in *Driscoll* found materiality based on the relationship of withheld information to an *abandoned* claim (a claim that never became part of the patent). In *Kimberly Clark* the Federal Circuit specifically held that it was wrong to so base materiality. 745 F.2d at 1457.

3. *The Federal Circuit's Justification for its Standards Ignores the Problem*

The Federal Circuit has never considered its decisions to be contradictory. Instead, it has stated that multiple materiality standards are appropriate because different levels of *proof* of "intent" will support different standards of materiality:

> Questions of "materiality" and "culpability" are often interrelated and intertwined, so that a lesser showing of the materiality of the withheld information may suffice when a greater showing of the materiality of withheld information would necessarily create an inference that its nondisclosure was "wrongful." [citation omitted].
>
> Thus, for example, where an objective "but for" inquiry is satisfied

> under the appropriate standard of proof, and although one is not necessarily grossly negligent in failing to anticipate judicial resolution of validity, a lesser showing of facts from which intent can be inferred may be sufficient to justify holding the patent invalid or unenforceable, in whole or in part. Conversely, where it is demonstrated that a reasonable examiner would merely have considered particular information to be important but not crucial to his decision not to reject a showing of facts which would indicate something more than gross negligence or recklessness may be required, and good faith judgment or honest mistake might well be a sufficient defense.

American Hoist, supra, 725 F.2d at 1363. *Accord Argus Chemical*, 759 F.2d at 14; *J.P. Stevens*, 747 F.2d at 1567; *Kimberly-Clark*, 745 F.2d at 1455. The Federal Circuit has thus focused on the proof of materiality at trial (rather than, for example, on the objective importance of the allegedly "material" information) and determined that high materiality must be shown where there is a weak *proof* of intent, but that low materiality is enough where there is a strong proof of intent.

This approach, although comfortable for an appellate court conducting an after-the-fact evaluation of a trial, provides absolutely no guidance for patent applicants trying to determine whether an item of information is sufficiently material that it should be submitted to the PTO. It is also of no value to others operating within the patent system (such as potential infringers or

purchasers of the patent) in determining whether the patent is likely to be enforceable. No one has any useful guidance regarding whether the eventual proof of intent at trial will be "high" or "low". This is especially so, because intent may be inferred from materiality, *American Hoist*, 725 F.2d at 1363, and no one can determine in advance which "materiality" standard will be applied by a court.

A patent applicant, of all those in the patent system, would seemingly face no problem if the applicant simply disclosed *everything* he or she knew of. Yet that approach has been condemned by both the courts and the PTO. In *Penn Yan Boats, Inc. v. Sea Lark Boats, Inc.*, 359 F. Supp. 948 (S.D. Fla. 1972), *aff'd*, 479 F.2d 1328 (5th Cir.), *cert. denied*, 414 U.S. 874 (1973), the court found a violation of the duty of disclosure, and invalidated a patent, when an applicant buried relevant information in a larger quantity of otherwise irrelevant information disclosed to the PTO. *Id.* at 965.

The PTO has agreed that excessive disclosure can violate the duty of candor. *See, e.g.*, U.S. Patent Office *Manual for Patent Examining Procedure* Sec. 2002.03. Significantly, the Federal Circuit has indicated it is of the same view. In *Rohm & Haas Co. v. Crystal Chemical Co.*, 722 F.2d 1556 (Fed. Cir. 1983), *cert. denied*, 105 S.Ct. 172 (1984), it refused to find "purge" of fraud when truthful information correcting earlier false statements was provided to the PTO, but contained in "a mountain of largely irrelevant data" *Id.* at 1573.

Accordingly, the Federal Circuit's justification for its multiple standards of materiality is no justification at all. The patent system is still devoid of guidance, and is still plagued with uncertainty that the Federal Circuit was created to eliminate.

C. GENERAL SIGNAL IS AN IDEAL CASE TO RESTORE THE CERTAINTY

Grant of certiorari in *General Signal v. Allied* will provide an excellent forum for the Supreme Court to concisely define materiality, and thereby eliminate uncertainty in the Patent System regarding materiality. Only materiality remains in issue since the Federal Circuit vacated every District Court ruling on validity except the finding of inequitable conduct, and that finding hinges on the materiality standard adopted. The District Court held the patent unenforceable for inequitable conduct, despite finding that "it is unlikely that the [PTO] examiner would have denied the patent on the ground that it was not [Petitioner's] idea", and that submission of additional information "would not necessarily have had a significant impact on the examiner's review of the application." p.39a. The sole issue then is whether information is sufficiently material when an adverse effect from withholding that information was "unlikely."

General Signal will also allow meaningful comparisons to be made, since the Federal Circuit's decision contradicts *Corona* and some of its own decisions. The district court's "unlikely" ruling implies no fraud occurred under the *Corona* standard. Likewise, no fraud occurred under the Federal Circuit analysis in *Vandenberg*, where the

Federal Circuit said that it was not enough to show materiality, if the district court simply assumed it was "highly doubtful" that a patent would have issued if the information had not been withheld. 740 F.2d at 1568-69. This case also contradicts *J.P. Stevens*. There the Federal Circuit criticized the District Court for finding no fraud based on "possibilities" that *could* occur. 747 F.2d at 1564. In this case, the Federal Circuit found materiality only because providing the withheld information "would have prompted additional inquiry". p.3a.[8]

D. A SINGLE MATERIALITY STANDARD SHOULD BE ADOPTED CONSISTENT WITH SUPREME COURT PRECEDENT

Petitioner contends that there should be a single standard for materiality. A finding of fraud or unenforceability has dramatic consequences that far exceed merely rendering the patent unenforceable. For example, it exposes the patent owner to potential liability for the attorney's fees expended in defending an infringement suit. *Rohm & Haas Co. v. Crystal Chemical Co.*, 736 F.2d 688,

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8. *General Signal* suggests further uncertainty because the decision was unpublished. The patent system has therefore never been told of one form of prohibited conduct. General Signal had no way of knowing in advance that omission of the cover sheet could produce a finding of inequitable conduct. The rest of the inventors, patent owners and competitors of patent owners in the patent system still do not know that such dire consequences are lurking in Federal Circuit law.

692 (Fed. Cir.), *cert. denied*, 105 S.Ct. 172 (1984). The patent owner can be subjected to treble-damage antitrust liability. *Walker Process Equipment, Inc. v. Food Machinery & Chemical Corp.*, 382 U.S. 172 (1965). The patent applicant and his attorneys can even be subjected to disbarment or criminal liability. *See Kingsland v. Dorsey*, 338 U.S. 318, 318-19 (1950). Moreover, a finding of fraud can severely damage a patent owner's business reputation and the personal reputation of the individuals involved. Given those devastating consequences, fraud, and especially materiality, should be precisely defined with a single standard.

Any standard adopted should also eliminate the uncertainty between "intent" and "materiality" reflected in Federal Circuit decisions. The Federal Circuit has repeatedly held that fraud must always be proved by "clear, unequivocal and convincing evidence." *See, e.g., Orthopedic Equipment Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1383 (Fed. Cir. 1983). One of the Federal Circuit's predecessor courts,[9] has ruled that "[t]he state of mind of the one making the representations is probably the most important of the elements to be considered in determining the existence of 'fraud'." *Norton v. Curtiss*, 433 F.2d 779, 795 (C.C.P.A. 1970). Yet the Federal Circuit has ruled that "intent" can be inferred from "a lesser showing of facts" when "but for" materiality is shown. *American Hoist,*

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9. The Federal Circuit has adopted the decisions of its predecessors, the Court of Claims and the Court of Customs and Patent Appeals, as binding precedent. *South Corp. v. United States*, 690 F.2d 1368, 1370 (Fed. Cir. 1982).

supra, 725 F.2d at 1363. If intent is the "most important" element, then the requisite "clear and convincing" proof should not be satisfied by a "lesser showing of facts."[10]

All of these problems can be reconciled by returning to the *Corona* standard: i.e., whether the information is "indispensable" to the patent's grant. Applying that standard, the information in this case was not material, and the uncertainty created by the Federal Circuit's four standards will disappear. Regardless of the standard chosen, the Patent System will benefit from the certainty resulting from the adoption of a single standard.

CONCLUSION

The patent system is threatened by needless uncertainty: no one knows just what information is or is not sufficiently "material" to destroy a patent. Although the Federal Circuit has had ample opportunity to resolve the uncertainty, it has exacerbated it instead. Since the Supreme Court has not considered patent fraud in over forty years, the time has come to clarify the law that the Federal Circuit admits is "cluttering up" the courts. This case presents an excellent opportunity to provide the patent system with the

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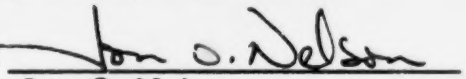
10. In *General Signal*, the district court was apparently uncertain of the state of mind, since it ruled that the action "was not mere negligence nor even gross negligence, it was *probably* intentional." p.40a. (emphasis added). The court did not say if this ruling was made on a "lesser showing of facts."

necessary guidance and delineate a precise standard of "materiality". The petition for certiorari should be granted.

Respectfully submitted,

By: 

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APPENDIX

APPENDIX

Note: This opinion will not be published in a printed volume because it does not add significantly to the body of law and is not of widespread legal interest. It is a public record. It is not citable as precedent. The decision will appear in tables published periodically.

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

ALLIED TUBE AND CONDUIT CORP.,

Appellee/Cross-Appellant,

v.

GENERAL SIGNAL CORPORATION,

Appellant/Cross-Appellee.

Appeal Nos.
85-2324
85-2408

DECIDED: March 20, 1986 *

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* This appeal was originally decided in an opinion dated February 26, 1986. On March 10, 1986, Allied Tube & Conduit Corp. filed a "Motion to Clarify Decision." In light of that motion, our decision of February 26, 1986, has been recalled and is being reissued in its present form.

Before MARKEY, *Chief Judge*, BALDWIN and NIES, *Circuit Judges.*

NIES, *Circuit Judge.*

DECISION

General Signal Corporation appeals from the final judgment of the District Court for the District of Connecticut in Civil No. B-79-340, holding General's U.S. Patent No. 4,033,167, issued to Philibert, invalid, unenforceable and not infringed. The district court determined that the patent was: (1) invalid under 35 U.S.C. Sec. 112 for lack of an enabling disclosure; (2) invalid [presumably under Sec. 102(f)] because Philibert did not invent that which was claimed; (3) invalid [presumably under Sec. 102(a) or (b)] as anticipated by a prior art Mexican publication; (4) invalid for obviousness under Sec. 103; (5) unenforceable because of a breach of an applicant's duty of candor [inequitable conduct]; (6) unenforceable against Allied Tube because of Allied's irrevocable, non-exclusive, non-assignable, royalty-free license by implication arising out of Philibert's conduct; and (7) not infringed. We *affirm* the judgment on the ground that the patent is unenforceable as a result of inequitable conduct; *vacate* the district court's holding of invalidity; and *remand* for consideration of Allied's request for attorney fees under the proper legal standard.

DISCUSSION

In Philibert's response to the final rejection of all of his claims under 35 U.S.C. Sec. 103, he deemed it necessary to "furnish as complete a history as possible of the development of applicant's invention." Philibert then failed to include within the documents submitted to the Patent and Trademark Office, his February 4, 1974, proposal advocating the subsequently rejected 3/8 inch per foot taper. The submission did include a proposal for 3/4 inch per foot taper, which is claimed in the subject patent. That latter proposal, however, was written by Auerbach, an employee of Allied. The cover page, which identified the proposal as Auerbach's work and its date, was deleted from the copy sent to the PTO.

The district court found that the failure to credit Auerbach as the author was material, because it would have revealed the input of others and would have prompted additional inquiry as to whether the idea was truly Philibert's as opposed to the combination of the deliberations of the *ad hoc* committee. The district court further found that the "[f]ailure to credit Auerbach was not mere negligence nor even gross negligence; it was probably intentional."

We have fully considered the arguments made by General; however, it has failed to show that the findings on materiality and intent are clearly erroneous. Based upon these findings, in light of all of the circumstances of this case which need not be detailed here, the district court committed no error in holding the '167 unenforceable as a result of inequitable conduct in the PTO. *See J.P. Stevens & Co., Inc. v. Lex Tex Ltd., Inc.*, 747 F.2d

1553, 1559-60, 223 USPQ 1089, 1092 (Fed. Cir.), *cert. denied*, 106 S. Ct. 73 (1985).

General disputes the finding of materiality with the simplistic analysis that "the document is not prior art, *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed. Cir. 1983), *cert. denied*, 104 S. Ct. 709 (1984), and therefore, was not material to the allowance of the patent." That was true in *Environmental Designs*, where a third party's abandoned disclosure apparently had no relevance to any issue of patentability. It was admittedly not "prior art" under any subsection of sec. 102; therefore, its nondisclosure was not material. The present case is different, because the authorship of the document relates to a question of patentability of one or more claims under sec. 102(f). *Environmental Designs* does not support the broad rule suggested by General, that what is not "prior art," presumably under sec. 102(a) or (b), can never be material, and that case does not control the outcome here. Nor does General's statement that inventorship was not before the PTO negate the district court's finding of materiality. Although they are perhaps uncommon, sec. 102(f) rejections are within the province of the PTO, *see, e.g., Morgan v. Hirsch*, 728 F.2d 1449, 221 USPQ 193 (Fed. Cir. 1984); *In re Smith*, 714 F.2d 1127, 218 USPQ 976 (Fed. Cir. 1983); *A.F. Stoddard & Co., Ltd. v. Dann*, 564 F.2d 556, 195 USPQ 97 (D.C. Cir. 1977); *see also Sheffner v. Gallo*, 515 F.2d 1169, 1173-74, 185 USPQ 726, 729 (CCPA 1975) (Miller, concurring, explaining that the Board of Patent Interferences need not consider proof of derivation from a stranger to the interference, because the examiner can make a sec. 102(f) rejection in subsequent *ex parte* prosecution).

Contrary to General's statement in its reply brief, Allied's position is not, nor do we hold, that every applicant must disclose every document and its author that may relate to inventorship, in order to comply with 37 C.F.R. Sec. 1.56. General's fear merely illustrates the difficulty inherent in attempting to derive bright-line rules from a complicated fact situation. But, in any event, this case deals with acts of commission not simply acts of omission. Based on the facts of this case, including the representation and submissions to the PTO and the circumstances surrounding the *ad hoc* committee, the district court simply found that General's failure to credit Auerbach was material. Because General has failed to show that the court's findings were clearly erroneous, or that the court misapplied the relevant law, the judgment that the patent is unenforceable is affirmed.

With respect to Allied's cross-appeal, it does not appear that the district court, in declining to award attorney fees to Allied, followed the two-step analysis that has been adopted in this circuit. In light of our affirmance of the holding that inequitable conduct occurred, we vacate the denial of fees and remand for evaluation under the proper legal standard. *See Reactive Metals & Alloys Corp. v. ESM, Inc.*, 769 F.2d 1578, 226 USPQ 821 (Fed. Cir. 1985); *Bayer Aktiengesellschaft v. Duphar International Research*, 738 F.2d 1237, 222 USPQ 649 (Fed. Cir. 1984).

Our affirmance on the above ground makes it unnecessary to render a decision on the other issues of the appeal. However, because we do not endorse the analysis of those issues in the district court memorandum of decision, we vacate the portion of the judgment holding the patent invalid.

UNITED STATES DISTRICT COURT
DISTRICT OF CONNECTICUT

ALLIED TUBE AND CONDUIT CORP.

-vs- Civil No. B-79-340 (PCD)

GENERAL SIGNAL CORP.

MEMORANDUM OF DECISION

Plaintiff, Allied Tube & Conduit Corp. (Allied), seeks a declaration that Patent No. 4,033,167 (patent) is invalid, or that if valid (1) it is not being infringed by plaintiff; (2) defendant, General Signal Corp. (General), the assignee of the patent, has impliedly licensed Allied's use; or (3) General is estopped from enforcing the patent against Allied. Allied wishes to produce intermediate weight electrical conduit (IMC) without harassment by General. Jurisdiction is properly founded on 28 U.S.C. Sections 2201 and 2202, *Walker Process Equip., Inc. v. Food Machinery & Chemical Corp.*, 382 U.S. 172 (1965), including Allied's prayer for injunctive relief. *Vermont Structural Slate Co. v. Tatko Bros. Slate Co.*, 253 F.2d 29 (2d Cir. 1958), citing *Kessler v. Eldred*, 206 U.S. 285 (1907). The action also lies under 28 U.S.C. Secs. 1131, 1332 and 1338(a).

General asserts the validity of the patent and has counterclaimed asserting infringement for which damages are prayed.

For the reasons set forth below, judgment shall enter for plaintiff.

Findings of Fact

1. Allied is a Delaware corporation with its principal place of business in Illinois.

2. Allied is in the business of manufacturing and selling tubular steel products including electrical conduit.

3. General is a New York corporation and has a place of business in Stamford, Connecticut. A subsidiary of General, OZ/Gedney, located in Terryville, Connecticut, manufactures fittings used with conduit to create a race-way system in which electric wires are supported, insulated and protected.

4. A building's electrical distribution system is formed by installing conduit then pulling wires or cables through the conduit.

5. Prior to 1974, two kinds of conduit were available in the marketplace: rigid steel conduit (rigid) and electrical metallic tubing (EMT). Rigid was much heavier than EMT and thus provided greater protection for the encased wires, including insulation from gases and fluids, since sections of conduit were joined to one another, or to fixtures, at threaded joints. As a safety factor, certain installations require that conduit be joined by threaded joints. EMT was thin-walled and as a result its joints could not be threaded, but rather were joined by clamping action. EMT could be joined to rigid by adapters.

6. Intermediate weight conduit (IMC) was proposed as an alternative to rigid, providing the

advantage of wall strength and the integrity of threaded joints. IMC could be threadless. IMC's substantial reduction in wall thickness as compared to rigid resulted in considerable cost savings.

7. The National Fire Protection Association (NFPA) and the American National Standards Institute (ANSI) are concerned with product standards in the United States, with an emphasis on safety.

8. The National Electrical Code (NEC) describes particular products related to the use and distribution of electricity. Its purpose is the protection of persons and properties from harm caused by products used with electricity.

9. As it is promulgated by private organizations, the NEC has no official status. However, due to the breadth of the input in drafting its provisions, and its wide-spread adoption and/or endorsement by numerous levels and agencies of government, it enjoys substantial authority and acceptance.

10. The NEC pertains to electrical conductors and equipment used in the distribution of electricity.

11. The NEC does not provide product design specifications.

12. A new product, not covered in the NEC, faces a substantial obstacle in penetrating the market.

13. Amendments to the NEC or new NEC articles may be proposed by interested persons.

14. Proposals are subjected to a review process which can lead to incorporation into the NEC, which is revised every three years. A proposal is initially reviewed by a code-making panel (CMP) whose members represent a broad spectrum of the businesses or industries most closely related to the production and use of the product covered by the proposal. The CMP reports to the Electrical Correlating Committee which publishes any proposals, in the form received from the CMP, for comment by the NFPA membership and other interested parties.

15. After a period for comments, the proposal is reviewed again by the CMP in relation to the comments and returned to the correlating committee with a recommendation. The correlating committee then makes its determination as to the proposal, which, if approved, is submitted at the NFPA meeting next prior to the publication of the new NEC.

16. In or about 1970, Allied determined to produce IMC, to serve the same purposes as rigid, but at substantially less cost. In part, Allied was motivated by the fact that in times of steel shortage a supply of steel for rigid was not guaranteed but was vulnerable to the steel industry's varying price and supply determinations.

17. In February of 1972, Allied decided to propose an article recognizing IMC in the 1975 NEC.

18. Allied initially proposed an unthreaded IMC.

19. The thinner walls of IMC presented a problem for threading necessary for the threaded joints.

20. In order to substantiate its proposal, Allied requested a fact-finding investigation by Underwriter's Laboratories (UL). Such an investigation is generally necessary for NEC recognition of a new product.

21. UL is an independent agency which conducts investigations in relation to proposed products in the distribution and/or use of electricity. It also promulgates standards for specific products and lists those products which comply therewith.

22. UL listing is advantageous, if not essential, for acceptance in the marketplace.

23. In reporting on a fact-finding investigation, UL draws no conclusions and makes no recommendations but merely reports the test data on the product's performance when used as intended.

24. Allied's original concept - with the approval, if not the instigation of UL as a safety matter - was that IMC would not be made compatible with rigid. Allied hoped to produce a cost-advantageous product which would substantially, if not totally, replace rigid.

25. Allied's initial submission to UL was threadless IMC. In July of 1972, UL's test format was established and testing was commenced on samples furnished by Allied.

26. In November of 1972, Allied advised UL of its intention to request testing on threaded IMC.

27. On November 27, 1972, UL's report on the unthreaded IMC was issued.

28. In early 1973, Allied supplied threaded IMC to UL for testing.

29. On October 4, 1973, UL issued its report on the threaded IMC and on November 9, 1973, reported on its tests of threading in the field (i.e. at the point of installation).

30. Allied's proposal included ten trade sizes, starting with 1/2", increased by steps of 1/4" through 1-1/2" and then increased by 1/2" steps to 4" inches. The dimensions were thus comparable to the trade sizes of rigid. As Allied contemplated IMC would replace rigid, the proposal did not accommodate ready-joining of IMC to rigid.

31. Allied's proposed IMC thread had the same count as the standard thread, National Pipe Thread (NPT), used on rigid, but had a different taper, 3/8" per foot, which would not readily thread with rigid conduit or its fittings.

32. From fittings manufacturers, Allied had ascertained that fittings would be available to accommodate the proposed thread. Adapters could be used where necessary to join IMC and rigid.

33. As proposed, IMC would be distinguished from rigid by a color-coding scheme.

34. Allied's proposal was referred to NFPA's CMP #8, which approved the proposal for threadless IMC in January of 1973 and, in December 1973, approved the threaded IMC proposal.

35. In February 1974, the correlating committee of the electrical section of NFPA approved Allied's proposal for the NEC. Final approval was to be considered by the NFPA membership in May, 1974.

36. In mid-January 1974, several manufacturers of conduit fittings expressed concern with Allied's proposed threaded IMC, partially on the basis of safety. They were also concerned that an incompatible IMC thread would require the fittings industry to produce and maintain two inventories of fittings, one with the proposed IMC thread and the other with a thread for use with rigid.

37. This concern was pressed to Mr. William Fahrquar of UL in January 1974. Mr. Robert Philibert the chief engineer of OZ/Gedney, a subsidiary of General, was instrumental in bringing this concern to the attention of UL.

38. Use of rigid conduit involved threading in the field using devices which created the NPT thread. Rigid thread had a taper of 3/4" per foot. If such devices were used on IMC, substantial safety concerns would arise, for it was likely that the cutting edges of the threading device would break through the interior walls of the IMC.

39. Although one section of the UL staff was satisfied with incompatibility between IMC and

rigid, safety concerns resulting from incompatibility prompted Fahrquar to initiate an assessment of the safety factors involved.

40. Fahrquar formed an ad hoc committee to consider Allied's proposal, including incompatibility, from a safety point of view. The ad hoc committee represented many segments of industry involved with conduit, including fittings manufacturers, conduit manufacturers, and steel companies.

41. The committee met first on February 7, 1974. Initially it debated the incompatible factors of Allied's proposal.

42. When compatibility was agreed to, the ad hoc committee's deliberations focused on the development of a configuration of IMC that would be compatible with rigid fittings.

43. One alternative to Allied's proposal was "swaging," a process by which the outside diameter of IMC was reduced by pressure. Field processing was necessary as pieces of conduit were cut to fit particular locations. The swaging proposal was found unacceptable.

44. In January 1974, Philibert, who had reviewed Allied's drawings for the dimensions and threading to be used on IMC as designed by Mr. Kenneth Cole, of Picoma Industries, a threading expert, and who knew that UL was convening the ad hoc committee, commenced developing a thread and configuration for IMC.

45. Under date of February 4, 1974, Exhibit

43, Philibert memorialized his proposal and submitted a copy to General's patent counsel.

46. One alternative considered by the ad hoc committee was Philibert's proposal which proposed an outside diameter reduced to a dimension commensurate with the lowest end of the range of tolerance for rigid's diameter, retaining the 3/8" inch tapered thread.

47. To produce a standard product, nominal measurements are specified with limited deviations from that standard stated as tolerances. Thus, the nominal outside diameter of one-half inch rigid conduit is .840" with tolerances to .856" on the high side and .809" on the low side.

48. The ad hoc committee deliberated through February and March without agreement substantially because Allied declined to agree that IMC must be compatible with rigid fittings. Allied's position was that to change its proposal for the new IMC article in the NEC would jeopardize the approvals it had already obtained and it would therefore have to start anew with the submission of a new proposal. Such a process would not possibly obtain approval in May 1974 when NFPA next met and thus Allied would lose its opportunity for inclusion in the 1975 code, which would mean that the earliest a revised IMC could be approved for incorporation in the NEC would be in 1978.

49. In April 1974, Allied's president, Mr. Theodore Krengel, agreed to threading IMC to be compatible with rigid fittings. Prominent among his reasons was the undertaking of UL and the fittings industry's representatives to support the

Allied IMC proposal, as revised, at the May 1974 NFPA convention.

50. Allied's agreement broke the log-jam and resulted in the ad hoc committee's agreement on a threading configuration of IMC featuring a 3/4" taper, an outside diameter at the low end of the tolerance range of rigid conduit with a five-thousandths tolerance either side of the nominal outside diameter, and a wall thickness calculated to accommodate the threading.

51. Upon that resolution, Philibert and Cole consulted to draft final specifications for the various trade sizes of IMC which the ad hoc committee approved.

52. The discussions of revised specifications for IMC, which involved contributions and comments by substantially all of the ad hoc participants, was pointed toward the development of a compatible thread configuration whereby the same fittings could be used with both types of conduit.

53. Compatibility between IMC and rigid eliminated the necessity and expense of developing, manufacturing and stocking separate fittings for IMC and for rigid.

54. Philibert participated in the ad hoc committee meetings as a representative of General with full knowledge that the committee was to develop thread specifications and a configuration as an alternative to Allied's proposal.

55. Allied's proposed threading with a 3/8" taper was not disputed as a safe and workable

thread permitting conduit to be manufactured with a minimum wall thickness. The concern of the ad hoc committee was safety when, in the field, two different sizes of the conduit, each with its own threading and fittings, could be used. Inadequate understanding by installers and lack of the proper tools to work with each size conduit could result in field threading and fitting use which could produce unsafe joints and break-through of the threading to the interior of the IMC.

56. The committee's deliberations were believed by the participants and UL to have resulted in an IMC with thread dimensions and a configuration that were fully compatible with rigid and that would lead to development of a UL standard for IMC that would incorporate the specifications agreed upon. The taper configuration was changed from 3/8" per foot to 3/4" per foot to comport with the NPT threading of rigid. This necessitated an increase in the wall thickness of several of the trade sizes of IMC to accommodate the threading and avoid breakthrough of the interior wall of the IMC.

57. On April 26, 1974, Allied submitted to UL a written proposal for an IMC standard drafted by Bernard Auerbach, an employee of Allied.

58. Fittings manufacturers' representatives, including Philibert, supported Allied's proposed NEC article 345 as modified to conform to the ad hoc committee agreement.

59. NFPA approved Allied's proposal, amended to delete the reference to a 3/8" taper.

60. UL issued a proposed IMC standard on October 23, 1974, substantially in conformance with the determinations of the ad hoc committee and as proposed by Mr. Auerbach.

61. While Philibert's February 4, 1974, proposal was intended to produce compatibility, it retained a 3/8" per foot taper. Rigid was required to have a 3/4" per foot taper. IMC was noted by Philibert to be unable to "have a taper of three quarters inch per foot . . . since [IMC] has insufficient wall thickness to allow for this angle of taper."

62. Philibert's proposal was designed to produce compatibility between IMC and rigid and thus was not an alternative to the Allied proposal, which was premised on an incompatibility between IMC and rigid.

63. Philibert calculated dimensions to accommodate threading within the available metal provided by the wall thicknesses specified. The dimensions derived are specifically noted to be "the subject of future discussion." Exhibit 43.

64. Philibert's proposal was discussed as part of the deliberations of the ad hoc committee, the object of which was "to discuss all aspects of [IMC] as they relate to the production of techniques and practices so that proposed requirements which UL develops will represent the highest degree of compatibility possible." Exhibit 34.

65. As of the February 21, 1974, meeting of the ad hoc committee, neither swaging nor Philibert's proposals were adequately refined for

assessment as solutions of the various problems presented. At that point "it was recognized that a great deal of study would be required to consider all the problems relating to these proposals before further consideration could be given to them." (Exhibit 34) and obviously before a final judgment could be made. The further study by the committee was pointed toward "further development of the threads," (*id.*) in which all members of the committee, including Philibert, participated.

66. While the ad hoc committee incorporated Philibert's proposed outside diameter at the low end of the range of tolerance for rigid conduit with close tolerances established in relation thereto, "significant effort and time was spent developing thread dimensions and gauging" with "adjustments in wall thickness of the tube, . . . necessary in some cases," evolving from the discussion. Exhibit 36.

67. Plaintiff's production of IMC has been marked by experimentation and adjustment in order to avoid thread breakthrough. IMC's wall is kept to a minimum thickness. It thereby provides a limited thickness into which the threading dies may cut to produce a thread without their cutting through the interior wall. Tapering the thread results in a deeper cutting into the wall at the distal end of the thread. Plaintiff has altered the wall thickness (to range between 66% and 72% of rigid wall thickness), threaded short (i.e. omitted one or more of the distal end threads) experimented with thread truncation, and increased the pitch diameter, all in deviation from the patent specification. Strict adherence to the patent specifications was found not to result uniformly in a saleable product.

68. Philibert's patent application was filed on August 21, 1974.

69. The patent application was formally rejected twice by the patent examiner as obvious.

70. On March 5, 1976, a continuation application was filed and was assigned to a different examiner. The continuing application was also rejected on July 14, 1976.

71. After a conference between representatives of General, Philibert, Mr. Ohlant, the patent attorney representing General, and the patent examiner, as a result of which a full background documentation was purportedly filed, the patent office, on July 5, 1977, issued Patent No. 4,033,167. The disclosure incorporated, as data for the product, a draft of a proposed standard for UL written by Mr. Auerbach, an employee of plaintiff. The incorporation of Auerbach's work was intentional, on behalf of the patent applicant, as reflected in the pagination, and knowingly incorporated the work of another since the first two pages of Auerbach's submission to UL, which clearly identified the work as not Philibert's, were omitted from the submission to the examiner. Thus, the application was supported, to all outward appearances, by the work of Auerbach without identifying its author.

72. The inventor named in the patent was Philibert.

73. On August 8, 1974, Philibert assigned his entire right, title and interest to the invention to General.

74. The patent is a combination of steps by which IMC is formed with a wall thickness of approximately 60% of that of rigid conduit, a 3/4" per foot tapered NPT thread, an outside diameter approximating the lower range of rigid conduit, a plus or minus five-thousandths of an inch (.005") tolerance for the smaller trade sizes and a plus or minus ten-thousandths of an inch (.010") tolerance for the larger trade sizes.

75. Allied commenced manufacturing IMC in the latter part of 1974 and has continued to do so to date.

76. Allied's IMC is found to have a wall thickness which ranges between 66% and 72% of the wall thickness of the corresponding trade sizes of rigid, resulting from Allied's adjusting dimensions in order to accommodate the specified thread in the UL standard and a 3/4" per foot taper.

77. On May 5, 1978, General offered Allied a license under the patent to manufacture IMC.

78. General's stated position is that all IMC manufactured under the UL standard infringes Patent No. 4,033,167 and thus requires a license for which General would demand a royalty.

79. Allied contends that its profit, calculated after taxes, on IMC manufactured between February 1975 and August 1984 totals $1,183,000. This included adjustments for a change of accounting. *See* Exhibits 120, 120A. Allied contends that it lost considerable sums selling IMC through 1978.

80. General has not enforced its contention that other IMC manufacturers are subject to license and royalty requirements under the patent pending the resolution of this lawsuit.

81. One skilled in the art of conduit design and manufacture would have the academic background and the experience claimed by defendant, but the record does not suggest that practical experience materially increased the qualifications for one skilled in the art.

Discussion

Preliminarily, the court must rule on the admissibility of defendant's proffered Exhibit 13, allegedly plaintiff's disclosure responses filed in other litigation and constituting admissions. Plaintiff does not question authenticity nor the authority of the filing attorney to speak on its behalf at least in the other litigation. As a judicial statement over the signature of one authorized by plaintiff to speak on its behalf, plaintiff is bound by the filing, *United States v. McKenna*, 738 F.2d 26, 30 (2d Cir. 1984), and it will thus be admitted, It is not hearsay. As the context does not clearly disclose its import nor intent, the weight of the evidence is subject to question; that does not, however, bar its admissibility.

Plaintiff claims that the patent is invalid for several reasons, that defendant should be estopped from enforcing the patent against it if valid, that it is not infringing the patent, and that it is entitled to attorney's fees and disbursements. Defendant counterclaims, asserting the patent's

validity, seeks damages for infringement in the form of a royalty. The patent is presumed to be valid. 35 U.S.C. Sec. 282. Plaintiff, therefore, has the burden of proving invalidity on at least one ground asserted, both to substantiate its claim and defend against the counterclaim.

I. Validity

Plaintiff's claims of invalidity will be examined seriatim.

A. Disclosure

A patent applicant must submit a clear, concise written description of the invention and of the manner in which it is to be made and used such that one skilled in the art is able to make and use it. 35 U.S.C. Sec. 112. There was no evidence that production in strict compliance with the specific embodiment of the patent's claims was infallibly feasible. Allied's evidence of its experimentation questions whether its changes from the teachings of the patent were within the range of the patent's claims. If the patent claims leave one skilled in the art with the necessity of undue experimentation in order to practice the invention, *see W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1557 (Fed. Cir. 1983), *cert. denied*, 105 S.Ct. 172 (1984); *White Consolidated Indust., Inc. v. Vega Servo Control, Inc.*, 713 F.2d 788, 791 (Fed. Cir. 1983), then the patent is invalid and there is no infringement. *Georgia Pacific Corp. v. United States Plywood Corp.*, 258 F.2d 124, 136 (2d Cir.), *cert. denied*, 358 U.S. 884 (1958). That the Patent Office found sufficient particularity in issuing the patent supports the presumption of validity, *Ortho Pharmaceutical Corp. v. American*

Hospital Supply Corp., 534 F.2d 89 (7th Cir. 1976), but is not controlling. The test is a reasonable degree of experimentation. *White Consolidated*, 713 F.2d at 791; *In re Brandtstadter*, 484 F.2d 1395, 1404 (C.C.P.A. 1973). An inventor may not rely on the knowledge of those skilled in the art to embellish his claimed invention without limitation, for in such case he would have merely patented an idea that required further input and inventiveness to produce a usable, functionable product. If what is undisclosed, and is required to make and use the patent, is known to the art, then the patent is not invalid for want of enablement. *Lindemann Maschinenfabrik v. American Hoist & Derrick*, 730 F.2d 1452, 1463 (Fed. Cir. 1984). An inventor may patent his own ideas, but he may not embrace the ideas of others necessary to make and put into practical use the ideas he claims to have patented. The disclosure in a patent must be judged as of the application, not on subsequently available information.

The patent's preferred embodiments were the same as the figures derived from deliberations of the ad hoc committee in April of 1974. However, the UL standards (Exhibit 48) varied from the patent, *see* Exhibit 53, as a result of increased wall thickness and the tolerances allowed for wall thickness. When Allied commenced manufacture of IMC in 1974, using NPT chasers (tools used to cut threads) to thread the IMC as per the UL standards, it found, by experiment, it was necessary to increase the wall size of .005" in a number of sizes. This was accomplished by changing the inside diameter (ID). With increased wall size, the cost of materials increased. Also, to avoid breakthrough, Allied experimented with "threading short," that is cutting one or two less

threads than were called for and thus not cutting as deep at the end of the IMC where the thread pitch diameter and root diameter (Ko) were the smallest. *See* Exhibit 107. Also thread truncation (cutting off or reducing the thread crest or height) was tried and pitch diameter (which controlled the depth to which the entire thread was cut into the wall) was altered. In 1979, Allied was making IMC at variance with the patent in a number of specifications. *Compare* Exhibit 33 *with* Exhibit 1. In 1980 to 1982, Allied's product varied from the dimensions specified in the patent. *Compare* Exhibits 3 and 81 *with* Exhibit 1. Thus, instead of a wall thickness 60% that of rigid conduit, Allied's product ranged from 66% to 72% of the thickness of rigid conduit. In addition, in 1982, the proposed UL permanent standards for IMC increased the wall thickness of 2-1/2" IMC by .010" to put added metal under the thread, that is between the deepest thread root and the inside wall of the IMC, suggesting the inadequacy of the earlier specifications, including those set forth in the patent.

Allied argues that the comparisons discussed above, without exploring the same in minute detail, clearly indicate that the patent does not represent disclosure of a patentable idea. The evidence disclosed the necessity of substantial experimentation with the dimensions of IMC from the start of production in 1974. That experimentation is claimed to have been necessary to produce a workable product, i.e. one that used less metal in thinner walls but at the same time accommodated an adequate thread without cutting too deeply into the IMC wall, a problem the patent was claimed to have solved. Put another way, plaintiff claims that the patent is invalid as not,

by its terms, providing a solution to the problem it purports to have solved.

A patent must be described in "full, clear concise and exact terms as to enable any person skilled in the art to make and use it without undue experimentation." 35 U.S.C. Sec. 112. The crucial test is found in the words "undue experimentation." The patent must teach one skilled in the art to practice the invention, *W.L. Gore*, 721 F.2d at 1540, that is, to use it as the means for solving a problem. The Philibert patent was to provide an IMC configuration with a thread compatible with rigid conduit such that the thread, when cut into the wall of the IMC, did not break through the inside of the IMC wall. The only apparent manufacture of IMC, albeit by plaintiff, could not simply use the dimensions and configurations of the preferred embodiment nor the claims of the patent and thereby produce a usable product. Allied's variations in the wall thickness, as evidenced in the UL standards, along with threading short, thread truncation and reduced pitch diameter all designed to cut less deeply into the wall, suggest that the patent did not solve the problem as claimed. A problem solution purportedly resulting from the combination of several dimensions which resulted in no novel configuration but a particular reduced OD wall thickness and thread configuration, the patent should be held to the combination Philibert claimed. To fail to limit the latitude of the patent would permit its monopoly to be extended to other combinations of dimensions without justification. The evidence shows a sufficient number of changes in the dimensions to suggest that Philibert did not provide the full, clear, concise and exact terms so as to preclude the necessity of additional

experimentation. What Allied was obliged to do is found to constitute undue experimentation.

Plaintiff's claim under 35 U.S.C. Sec. 112 must be sustained.

B. Particularity

The patent refers to a wall approximately 60% as thick as the wall of rigid conduit, a small tolerance from the nominal OD and an OD which approximates the low end of the range of tolerance for rigid OD. (Philibert's minimum OD ranges from .001" to .006" above the minimum rigid OD.) The patent does not define the reference point, i.e. the dimensions of rigid conduit. If the American Society for Testing Material (ASTM) standard for rigid conduit is used, one set of numbers would apply and a different set is established by ANSI, e.g. an OD range of .809" to .856" for 1/2" conduit per ASTM as opposed to .825" to .855" for ANSI. The patent also refers to the NEC. At application, the NEC (1972) made no mention of IMC. At the patent issuance, the NEC (1975) incorporated the amended Allied proposal. These vaguenesses are somewhat clarified by other provisions of the patent and, though not without difficulty, a practitioner could practice the patent notwithstanding the want of precision in these respects. Therefore, although not trivial, the lack of particularity raised by plaintiff is insufficient to invalidate the patent. The wording used is adequate to withstand a challenge, under 35 U.S.C. Sec. 112, for vagueness, lack of clarity and particularity.

C. Inventorship

To sustain his patent, Philibert had to be the inventor. A granted patent is presumed to be valid and plaintiff has the burden of proving to the contrary. Consideration of who was the inventor requires comment on the process by which the patent came to be issued. Allied determined to make a conduit of less weight than the then standard rigid conduit. This called for a readily obvious method, reduction of wall thickness. In aiming at a fifty percent (50%) reduction in wall thickness, Allied sought to: develop a more economical product; reduce production costs; and lessen its dependence on the steel industry to supply the shells from which rigid conduit was made.

Allied's originally conceived IMC, for market and safety reasons, as not compatible with rigid conduit. Adaptors would be made to permit interconnection where necessary.

If the new product was to be successful, it was essential for Allied to secure trade approval. Efforts to achieve that purpose by an article in a 1975 NEC proceeded apace in 1972 and 1973, with a marked degree of success both for threaded and unthreaded IMC. In January 1974, the safety of Allied's proposal was questioned. If the product was not interchangeable, connections made in the field or the use of the improper threading devices on IMC were deemed potentially unsafe. The availability of two sets of tools to thread rigid as opposed to IMC was questioned. Manufacturers of fittings, including a subdivision of defendant, which employed Mr. Philibert, sparked the questioning, at least substantially motivated by

their wish to avoid the trouble and expense of manufacturing, stocking and selling fittings for two thread sizes. Mr. Philibert was in the forefront of the opposition. He had full knowledge, since 1973, of Allied's proposal, including drawings of its product. Allied had attempted to alert fittings manufacturers such as OZ/Gedney, Philibert's employer, to a potential need for new fittings.

Thus instigated, UL created an ad hoc committee in February 1974 to study the question. By February 4, 1974, Philibert claims to have formulated a solution to the problem of compatibility (obviously in anticipation of the success of the objection to Allied's incompatible IMC). Under date of February 4, 1973, Exhibit 43, he set forth his formulation. (Two of the drawings incorporated in Exhibit 43 are dated subsequent to February 4, 1974.) The threading proposed by Philibert had a taper of 3/8" to the foot, as did the Allied proposal, and not the NPT standard 3/4" taper thread used on rigid. Before he circulated his paper to the ad hoc committee, Philibert dispatched a copy to defendant's in-house patent attorney.

Initially, the ad hoc committee debated whether compatibility was necessary. Until compatibility was required, a compatible thread on IMC was not a problem. Thus Philibert formulated a solution to a problem he was about to create. The preliminary approvals of Allied's proposals for IMC prompted it to be extremely reluctant to alter its proposal drastically lest it then have to start seeking approval all over again with an altered IMC which would be unlikely to be approved in time for the 1975 NEC, resulting in a delay until the 1978 NEC and in the manufacturing of IMC for

three years. In April 1974, when plaintiff's president, Krengel, was convinced that he would obtain the support of the fittings manufacturers and UL in obtaining approval for an altered IMC to be incorporated into the 1975 NEC, plaintiff agreed to alter its proposal to include threading that was interconnectible with rigid conduit fittings. At that time, the ad hoc committee turned in earnest to developing a configuration of IMC including wall thickness, OD, and ID and threading dimensions that not only provided compatibility, but were feasible. A sufficient wall thickness had to be matched with the cutting depth of the threading specifications to leave enough wall metal under the threads, that is, between the root of the threads and the inner wall of the IMC, to avoid break through of the inner wall. In order to reduce the wall thickness from that of rigid and allow a compatible thread to be cut in the wall of IMC, various combinations of dimensions were possible. Substantially all of the ad hoc committee participated in the calculations. Philibert's February 4, 1974, proposal was one starting point for the deliberations, but it is also clear that the final product differed substantially from his original proposal. The measure of the difference can most particularly be demonstrated in a comparison of the dimensions in Exhibits B and C attached to Exhibit 43, the February 4, 1974, proposal of Philibert, with the dimensions in Table II of the patent, Exhibit 1. The fact that changes were made shows that as of February 4, 1974, Philibert had not solved the problem of a feasible, compatible thread on the wall of IMC, although he claims to have done so, and confirms the input from a number of sources within the ad hoc committee to the final dimensions. The proposal of February 4, 1974, was premised on a 3/8" per

foot thread taper whereas the final thread used the NPT standard, 3/4" per foot taper, as on rigid conduit. The patent specifies 3/4" in the preferred embodiment, but the claims are open as to the actual taper used including a straight thread.

The evidence does not establish Philibert as the author. Philibert conceded the contribution of others, including particularly Cole who drafted the original thread in the Allied proposal. The adjustments made in his original proposal were in the wall diameters, the thread configurations, the taper, pitch diameter and thread truncation. While Philibert claims, in the patent, a wall thickness equal to 60% of the thickness of rigid conduit wall, a reduction in that range was required to give any purpose to IMC that is to constitute a lighter weight, less costly alternative conduit. When Krengel agreed to a compatible IMC, Allied's proposal required further reduction of the OD and a 3/4" tapered thread. Philibert's wall thickness was increased in and after the April 1974 meeting and truncation was considered. Of particular significance was the joint work done with Cole to present a final set of dimensions. Plaintiff characterized Cole as a collaborator, one who confirmed his, Philibert's calculations. Cole testified to a considerable substantive input on his part to the final dimensions approved by the ad hoc committee and which corresponded to the patent application. The court credits Cole's version of the contribution.

In short, Philibert's proposal of February 4, 1974, was not a solution and did not constitute the idea as patented although some of the conceptions, particularly the use of an OD at the low end of the tolerance range for rigid OD were used. Even

the ad hoc committee's final figures were changed in the standards adopted by UL in October 1974 and were changed further by Allied in practice after October 1974, when it commenced manufacturing. Thus, what Philibert patented, not only in its claims, but particularly as specified in the preferred embodiment, he did not invent. As will be discussed in relation to the claim of obviousness, he took several well known or obvious principles of mechanical engineering and mathematics and applied calculations starting with Allied's concept in order to give IMC a dimension or configuration after compatibility was agreed upon and the 3/8" taper was abandoned for a 3/4" taper, substantial contributions to which were made by the ad hoc committee including the UL staff and Cole. Thus, the patented idea was developed by the group, including substantial, but not substantially exclusive, contributions by Philibert.

D. Anticipation

The Mexican diaries, Exhibits 23 through 29, constituting a single publication and prior art, disclose in a general way a very basic principle. If one reduces the OD of IMC (denominated semi-heavy conduit in Mexico), compatibility with rigid (or heavy) conduit fittings can be achieved. Philibert claims in his patent the idea that a very limited range of dimensions is a solution to the compatibility problem.[2]

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2. The claim made by defendant is enlightening to the discussion of obviousness and infringement. If the uniqueness of the patent is the limitations of its dimensions, as defendant asserts to escape the embrace of anticipation by

The Mexican art discloses a narrow range of tolerance for the OD. Nothing in the record discloses how that range was decided upon. In the small sized IMC, the Mexican range is the same as the patent, .010". In the larger sizes, the Mexican tolerance range increases to .012", .016", and .020", consistent with Claim 7C of the patent, Exhibit 1. The Mexican IMC is, in practice, compatible with the heavy or rigid conduit as was the purpose of the patent. *See* Exhibits 20A through 20I. The nominal OD of the Mexican conduit is not consistently nor precisely correlated to the low end of the range of tolerance for rigid or heavy conduit, in contrast to the patent. In the smaller sizes, but for the 1/2" size, the Mexican maximum OD is lower than the patent minimum by from .019" to .043". In the larger sizes, the Mexican minimum OD exceeds the patent maximum OD by .002", .006" and .014". In only the 1/2" conduit size do the OD tolerances overlap. The dimensions of the Mexican wall thickness are all lower than the patent by from .006" to .016" except in the 4" size, where the Mexican conduit is .015" larger.

The Mexican art thus describes an IMC with a wall thickness which ranges from 50% to 60% of the thickness of rigid wall with an average of 56%. The preferred embodiment of Philibert's patent prescribed wall thicknesses from 53% to 63% of rigid, an average of 59.9%. The patent claims

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the Mexican diaries, then defendant must be held to the same standard, that is the very specific dimensions, in analyzing the patent for all purposes.

describe the wall thickness as approximately 60%. The Mexican wall thicknesses range further but clearly embraces the 60% figure as does the patent. If the Mexican dimensions do not qualify as prior art by reason of the discrepancy, as defendant argues, that determination would be significant with respect to the question of infringement as plaintiff's wall thicknesses range from 66% to 72% of that of rigid.

The Berger product is insufficiently presented to permit in the full range of conduit sizes, a finding of anticipation.

The Mexican semi-heavy conduit has the following features:

(a) A wall thickness ranging from 50% to 66% of that of rigid, with an average of 56%.

(b) An OD which is related to the lowest tolerance of rigid OD as follows:

Conduit Size	Lower Limit Rigid OD	A Difference Between Mexican OD Lower Limit and Rigid Lower Limit Actual Dimension	Percentage
1/2"	.809"	-.008"	- .99%
3/4"	1.019"	-.024"	-2.3 %
1"	1.284"	-.39"	-3.0 %
1-1/4"	1.629"	-.040"	-2.5 %
1-1/2"	1.869"	-.047"	-2.5 %
2"	2.351"	-.038"	-1.6 %
2-1/2"	2.846"	+.023"	+ .81%
3"	3.465"	+.021"	+ .61%
4"	4.455"	+.045"	+1.0 %

Average	-.017"	-1.1 %

(c) An OD tolerance of + or -.005" from 1/2" to 2" size conduit, + or -.006" for 2-1/2" conduit, + or -.008" for 3" conduit and + or -.010" for 4" conduit.

(d) A standard end PT thread (3/4" taper) or straight thread as determined by the customer.

(e) Compatibility with heavy (rigid) conduit.

Comparison of these features with the patent show a striking correlation. There is no magic to Philibert's characterization of his OD calculations in relation to the lower limit of the rigid OD tolerance when the Mexican art's dimensions are quite close and produce the same result, i.e. compatibility with rigid conduit. The Mexican art, Exhibits 23 through 29, is deemed a prior publication which anticipated the invention.

E. Obviousness

A patent may not be granted if the ideas are obvious, 35 U.S.C. Sec. 103, that is, what are commonly known principles within the ability of one skilled in the art. The problem in the case at hand was the manufacture of a thin-walled conduit which could be threaded. The claim is to a unique solution using principles of mechanical engineering and mathematics.

What was readily known, or knowable to one skilled in the art of conduit design and manufacture, based on the Berger art and Mexican art and logic and common sense, dictated all the principles or claims made in the patent.

1. The wall thickness was to be approximately 60% of the thickness of rigid. There is nothing unique about this as a dimension. The purpose of IMC was to reduce the wall to be as thin as possible in order to reduce the metal used. Yet because threading, particularly with a taper. cuts into the wall, the wall had to be thick enough to accommodate the threading with enough depth to preclude the cutting process from breaching or altering the integrity of the inner wall, called breakthrough. One can readily see that the actual wall thickness is controlled by the depth of the cutting of the thread plus an additional thickness to provide metal in the wall under the threads, preserving the integrity of the inner wall surface and the holding power of the threads. Allied's target was a reduction of the rigid wall by 50%, but a thicker wall was necessary when compatibility was required since a taper of 3/4" per foot, required to match the rigid threading, produced a deeper cut into the wall.

2. The nominal OD selected by Philibert resulted from the need to reduce the OD to reduce the wall thickness but more significantly to permit the proper meshing of the threads with rigid fitting. This proposal was obvious.

3. The narrow tolerance on the outside diameter would also be a matter of simple logic. A high OD would counter the needs discussed in section 2 above, a low OD would result in a joint with inadequate holding power and an inadequate electrical ground across the joint, a necessity for safety.

4. Claim No. 2 of the patent, placing of thread on IMC, is a combination claim and adds nothing novel but merely implements the concept of Claim No. 1.

5. Claim No. 3 of the patent does not state the taper but requires a matching taper with that of rigid conduit in order to provide compatibility, a seemingly obvious statement.

6. Claim No. 4 of the patent specifies the use of the same thread cutting dies used for threading rigid conduit, an implementation or combination claim which adds nothing novel and is obvious in view of Claim No. 3.

7. The use of a 3/4" taper, as per Claim No. 5, is not novel and seemingly is required for compatibility as being the same taper of NPT thread used on rigid conduit.

8. Claim No. 7, a summary or combination claim, with specification of the various sized conduits' nominal and minimum ODs, add nothing to the earlier claims.

Faced with compatibility as a requisite, there were but four choices - (1) reduction of the OD and the ID, each to a degree to leave sufficient wall thickness as required for a 3/4" taper thread; (2) truncation of the thread to reduce the depth required to cut it into the wall; (3) increase the thread diameters to reduce the depth of the cut into the wall; and (4) add wall thickness by reducing the ID. Each of these was an obvious possibility. Philibert chose one, the first listed, and made the calculations required and based thereon, calculations which were within the ability

of anyone skilled in the art, controlled by the necessary and critical relationship between the thread diameters and the ID to permit proper threading but without break through. These calculations were straightforward mathematics. They were dictated by the known and requisite parameters of matching the rigid fittings, keeping the wall as thin as possible, and the requisite depth required to cut the thread. The testimony of plaintiff's witnesses on the obviousness of this process is credited.

Based on the prior art, the nominal or slight differences between the prior art (principally the Mexican diaries and the earlier Allied proposal) and Philibert's proposal in February 1974, the level of skill in the art could readily have applied the principles used by Philibert, and absent any other indicia of non-obviousness, the patent is found to be obvious. *Graham v. John Deere Co.*, 383 U.S. 1 (1966).

Defendant sought to counter the claim of obviousness by a claim that secondary considerations, as discussed in *Graham*, *id.* at 17, and *Gore*, 721 F.2d at 1555, dictate a finding of non-obviousness. While it may be said that a conduit of intermediate weight was needed, it was not singularly needed in the form of compatible conduit. Whether based on safety considerations or an accommodation to the fittings industry, compatibility represented a compromise by the ad hoc committee. Then intermediate weight conduit was to be compatible with rigid conduit and there was a need for a configuration and dimensions distinct from the allied proposal. Philibert's February 4, 1974, paper did not solve the problem as the dimensions adopted by the committee and

thereafter incorporated in the patent constituted substantial variations from those in the February 4, 1974 paper. As previously discussed, the UL standards of 1974 and Allied's actual manufacturing specifications, represented further changes for the purpose of preventing breakthrough. There was no evidence of substantial praise for Philibert. Given the ad hoc committee's participation in developing the final figures, and particularly that of Cole, and the reaction to the patent, praise is not manifest in the record. Allied's experimentation in manufacturing the product is discussed elsewhere, and lends no support to defendant's claim. There was some approbation at Philibert's original suggestion. The significance of this reaction is markedly diminished by the fact that that proposal did not carry the day, particularly with its 3/8" taper. Thus, the distinction between the February 4, 1974, proposal and the committee's approved version is important in this regard. The patent is couched in dimensions approved by the ad hoc committee and which emerged from the deliberations after substantial tinkering with Philibert's original proposal.

Assessing the invention with the insight of one skilled in the art at and prior to the time of the proposal, *see Gore*, 721 F.2d at 1553; *Rosemount, Inc. v. Beckmann Industries, Inc.*, 727 F.2d 1540, 1543 at n.3 (Fed. Cir. 1984); and as a whole, *Schenck v. Norstrom Corp.*, 713 F.2d 782, 785 (Fed. Cir. 1983), the Philibert concept was obvious though its formulation required numerous calculations. The lack of a prior solution, excepting Allied's non-compatible one and the Mexican art, suggests the lack of a motivation to

formulate and/or manufacture IMC rather than any insurmountable problem resolved by the patent.

F. Duty of Candor

Plaintiff has claimed that Philibert breached the duty of candor owed to the Patent Office, *see* 37 C.F.R. Sec. 1.56, which is tested by whether an examiner, knowing the undisclosed information, would have regarded it as significant in the decision as to whether or not to allow the patent. *American Hoist & Derrick Co. v. Sowa & Sons*, 725 F.2d 1350, 1362 (Fed. Cir.), *cert. denied*, 105 S.Ct. 95 (1984). While the history of Philibert's "development" of the patent was material, it is unlikely that the examiner would have denied the patent on the ground that it was not Philibert's idea. The failure to include the Philibert paper dated February 4, 1974, and the absence of at least a summary of the ad hoc committee's work reflect a lack of candor on Philibert's part, and that of defendant which actually moved the application, but this information, by itself, would not necessarily have had a significant impact on the examiner's review of the application.

The draft standard for UL was part of the supplemental submission, but was identified as the work of Auerbach. It would have been significant to the examiner to have known the author of that material, particularly as other than Philibert, as such information would have reflected the development of the product and would have revealed the input of others. Further it would have prompted additional inquiry as to whether the idea was truly Philibert's as opposed to the combination of the deliberations of the ad hoc committee building on the Allied proposal. Failure

to credit Auerbach was not mere negligence nor even gross negligence; it was probably intentional. *See Kansas Jack, Inc. v. Kuhn*, 719 F.2d 1144, 1151 (Fed. Cir. 1983). The duty of Philibert, and defendant, to inform the Patent Office of all information material to the application was thus not complied with.

G. Estoppel

Plaintiff claims that by reason of the nature of the ad hoc committee's deliberations and its agreement to amend its IMC proposal in order to provide compatibility, that Philibert was under the duty to disclose to the ad hoc committee, and to Allied particularly, his intention to seek a patent. Based thereupon, plaintiff claims an estoppel against defendant's enforcement of the patent against it. No such disclosure, nor a disclaimer, was made by Philibert. The custom and practice of UL was not to develop products that would be the subject of a patent. The patent was unexpected by committee members. That Cole and Allied's personnel did not contemplate patent application on their work, suggests at least a tacit understanding that the work that the committee participated in would not be patented. It is illogical that so many in competing businesses would join in the development of a product in the course of the ad hoc committee's deliberations only to have one of the group assert an exclusive right to use the resulting idea, albeit one with a substantial involvement in the development. Clearly had the group or Allied known of the patent intention, their participation in the committee's deliberations, their agreement to permit Philibert's participation therein, and the acquiescence in an altered concept for IMC would

have been substantially different. The question is whether there was a misrepresentation by silence, i.e. whether Philibert had a duty to speak his intentions.

A representation must be material to form a basis for a claim of estoppel. Certainly it was material for plaintiff and others to know that a proprietary claim was going to be made to the altered form of the product which Allied proposed and which the committee aided in finalizing. There is little likelihood that any of the committee, nor Allied, would have committed so much time and effort to develop a feasible product only to have one participant put forth a proprietary claim thus precluding its manufacture and use except at the license of the one party. No less likely would have been allied's probable holding firm on its original proposal which, in February to April 1974, was so close to approval, had its exclusion from the alternative product's manufacture, except by license, then been made known to it. The issue is whether Philibert, under these circumstances, had a duty to disclose his intentions to assert a proprietary claim and thus exclude all of the others involved in the ad hoc committee's deliberations from the use, manufacture or sale of a product which resulted from the input thus derived.

Equitable estoppel has been applied where one acts or committed himself to act as a direct consequence of, or as a result of being led thereto by, the acts of another. *Stickle v. Heublein, Inc.*, 716 F.2d 1550, 1559 (Fed. Cir. 1983), citing *Dickerson v. Colgrove*, 100 U.S. 578, 580 (1879). Philibert clearly knew of Allied's intent to manufacture IMC, its original commitment to

incompatible IMC, its reluctance to alter its proposed IMC article for the 1975 NEC, its agreement to a compatible IMC, its urgent wish to get IMC approved in the 1975 NEC rather than suffer the delay until 1978, its contemplation for early production of IMC as soon as a UL standard could be promulgated, its work in finalizing an ad hoc committee formulation and the UL standard issued in October 1974, its actual commitment and sale of IMC under the formulation from late 1974 on. The patent was applied for in August 1974. Prior to the application, Philibert knew, and defendant being bound thereby had to have known, from February 4, 1974, when a patent possibility existed, during the entire ad hoc committee deliberations and thereafter while the patent application (in its original and renewed form) was pending until notice of infringement was given to plaintiff in 1978, of all these facts. The application did not disclose Allied's manufacture of the product. Suddenly in 1978, due to a long examination of the application, including three rejections for obviousness, with the patent in hand, General, now Philibert's assignee, claims infringement by manufacture of the product, which Allied basically proposed, in its final form to which Allied had substantially contributed.

Allied's claims of misrepresentation by the silence of Philibert is not a mere unilateral, after-the-fact expectation. A course of conduct on its part was clearly contemplated by all, including Philibert, and that was to manufacture and sell the product, which it proposed, as altered by the committee's deliberations to accommodate the wishes of the objectors to its proposal, including defendant. Allied, by acquiescing in the change of its proposal, thus became limited to manufacture of

the product which resulted from the committee's deliberations, only to have Philibert and defendant, after the fact, claim patent rights in the product which was derived from those deliberations. Philibert was not reticent to speak on behalf of defendant, his employer, for the purpose of obstructing the approval of Allied's proposal. Yet Philibert was totally silent as to his patent intentions while the committee debated, formulated and approved alternate dimensions for IMC which Philibert then incorporated into his patent application.

Under these facts, it was required that Philibert speak out and give notice of his intention to claim proprietary rights. To remain silent while Allied shifted its position and yielded the advantages of its two-year long effort to obtain approval of its proposed IMC and while a new form of IMC was developed, refined and recalculated was to lull Allied into an unalterable commitment to essentially the sole producible configuration as ultimately formulated by the committee. To find no duty in Philibert to disclose his intentions as to a proprietary claim and to permit him to have so forced, or participating in so forcing, Allied into its commitment to IMC as revised by the committee and then bar Allied from manufacture of that product or to be able to force Allied to pay a royalty for the privilege of manufacturing that product is clearly within the concept of equitable estoppel. In good faith, Allied had participated extensively in initiating and developing the product which evolved and is claimed to be subject to the patent, including the substantial effort to obtain trade approval, NEC inclusion and UL standards. To permit the development of the product under

these circumstances, the sole product which could thereupon be manufactured and to which plaintiff would thus be limited, without disclosure by Philibert would be unconscionable.

Defendant must, therefore, be held estopped from enforcing any patent that it may have, if it has any, at least as against Allied. All of the elements requiring and authorizing an estoppel exist here, plaintiff's ignorance of the intended patent application, the silence of Philibert in the face of a duty to disclose the intended application, plaintiff's reliance on the silence which thus constituted a misrepresentation, the inducement by Philibert of Allied's course of action based on such reliance, damages in the preclusion of manufacturing any other IMC, and damages in the form of a royalty obligation as an unanticipated cost of the manufacture if the patent were enforced. *See Volk v. Foundation for Christian Living*, 534 F. Supp. 1059, 1085 (S.D. N.Y. 1982); *Kierulff v. Metropolitan Stevedore Co.*, 315 F.2d 839 (9th Cir. 1963). Philibert's silence in the face of his clear intent to apply for a patent was intentionally misleading as to constitute bad faith. *Studiengesellschaft Kohle v. Eastman Kodak Co.*, 616 F.2d 1315, 1330 (5th Cir.), *cert. denied*, 101 S.Ct. 573 (1980), citing *TMW Manufacturing Co. v. Dura Corp.*, 592 F.2d 346, 350 (6th Cir. 1979).

Thus if the patent herein were valid, plaintiff would have an irrevocable, non-exclusive, non-assignable royalty-free license by implication therein.

H. Infringement

Even if the patent is valid, plaintiff claims it is not making the patented product and, therefore, is not infringing. What plaintiff is making has been thoroughly discussed above. Defendant disavows the prior art, but the only difference between the Mexican art and defendant's patent lies in the dimensions. Defendant relies heavily on the principles of a wall thickness 60% of the wall thickness of rigid conduit, an OD reduced to approximate the low range of tolerance of the OD of rigid conduit, an OD tolerance of .010" in the smaller sizes and .020" in the larger sizes, plus a standard NPT thread with a 3/4" taper. It argues that the precise dimensions of the Mexican art as compared to the patent, measured in thousandths of an inch, are sufficiently different as not to bar its patent as anticipated by the prior art. If prior art infringes a patent, it would disclose the patent and bar its validity. Thus, defendant argues that the patent dimensions distinguish it from the slightly different Mexican dimensions which would thus not teach the patent and would not infringe it. It follows that a restrictive view thus adopted by defendant may not be reversed to an expansionist view to the patent when claiming infringements. Thus defendant may not portray the patent as consisting of only a preferred embodiment with considerable flexibility as to the claims in seeking enforcement. If plaintiff were not strictly limited, then the patent would be overbroad, without adequate delineation and unreasonably preemptive of the field. Further, the claim, against a challenge of obviousness lies not in the general principles but in the precise calculations. So restricted, the patent cannot be

enforced substantially beyond its specified dimensions.

Allied manufactures a product, the wall thickness of which is 60% to 72% of that of rigid, substantially higher than the patent specifications. Further, Allied has at various times truncated the thread and threaded short. In this regard it is not appropriate to note that the court has calculated that the lower limits of the Mexican tolerance in contrast to the lower limits of the rigid tolerance ranges from -3.0% to +.8%, an average of -1.21%, and the deviation of the upper limits of the Mexican tolerance from the lower limit of the rigid tolerance extends from a -2.3% to a +1.2%, an average of -.5%. Comparing these percentages of deviation with the different wall thickness used by Allied suggests therein a greater deviation from the patent dimensions and claims. Those variations are sufficient to avoid infringement of Claims 1A, 2 as incorporating 1A, 4, 5 as incorporating 2, and 7A. While Allied's OD has not been shown to vary substantially from that set forth in the patent, the wall thickness tolerances have been increased in accordance with the UL standard. While it cannot be said that Allied is and has been manufacturing a product totally different from that described in the patent, it is only because we are dealing with a very simple device, a tubular configuration made in ten trade sizes. The necessity of compatibility with rigid conduit, and of cutting a thread compatible with rigid conduit into the IMC wall limits each size. While the court has not sustained the validity of the patent for reasons set forth above, if it is valid at all, the variations in Allied's practice do not constitute infringement, as they are as materially different from the patent as is the Mexican art.

IV. *Attorney's Fees/Disbursements*

While plaintiff has prevailed, the court declines to award attorney's fees and disbursements. Philibert and General were presented to the court more as opportunists who overreached than as intentional deceivers of either their fellow members of the trade at the ad hoc meetings or at the Patent Office. While equitable favor clearly lies against Philibert and General, their conduct was not so reprehensible as to constitute the exceptionable case required by 35 U.S.C. Sec. 285 before fees and disbursements may be awarded. The conduct of Philibert and General leading to the patent was far from a reflection of the epitome of candor and integrity, but it cannot be said to constitute fraud. *Hycore Corp. v. Schluecter Co.*, 740 F.2d 1529, 1540-41 (Fed. Cir. 1984); *see Kramer v. Duralite Co.*, 514 F.2d 1076 (2d Cir.), *cert. denied*, 432 U.S. 927 (1975).

For the foregoing reasons, judgment shall enter for plaintiff finding the patent invalid and unenforceable.

SO ORDERED.

Dated at Hartford, Connecticut, this 25th day of March, 1985.

/signed/
Peter C. Dorsey
United States District Judge